

### REMARKS

In the action mailed February 15, 2006, the Examiner rejected all of the claims 1-9 that were pending. Applicant amends in this paper claims 4, 5 and 7. Accordingly, claims 1-9 remain pending. Applicant requests reconsideration of claims 1-9 in view of the amendments above and the following remarks.

#### **Response to Claim Objections**

The Examiner objected to claims 4, 5 and 7 under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple independent claim. Applicant has amended claims 4, 5 and 7 to address the Examiner's objection, and accordingly requests that the Examiner remove the rejection.

#### **Response to Claim Rejections – 35 U.S.C. § 103**

The Examiner rejected claims 1-9 under 35 U.S.C. 103(a) as being unpatentable over **Saito et al.** (hereafter **Saito**) (U.S. Patent No. 5,655,075) in view of **Bosik et al.** (hereafter **Bosik**) (article entitled "Finite state machine based formal methods in protocol conformance testing: from theory to implementation"). Of the claims rejected, claims 1, 8 and 9 are independent. With respect to these independent claims, the Examiner contends that **Saito** discloses all of the limitations of the claims except the claim limitation of a first storage location, and the claim limitation of upon generation and storage of said information on said collaboration states and collaboration state transitions, retrieving that information from said second storage location.

Applicant respectfully submits that each of the pending independent claims – claims 1, 8 and 9 – defines subject matter that is patentable over the cited references, as do the pending dependent claims.

Claim 1, for example, is directed to a computer-implemented method to support in developing a process specification for a collaborative process. The collaborative process involves distributed computer-based participant systems that exchange messages through an asynchronous messaging network. The method is embodied by a computer program product

executable by a computer system and causing, when executed, said computer system to carry steps of the method. The method includes retrieving from a first storage location, information on local states and local state transitions in relation to each participant system. The information specifies, in relation to each local state transition, starting and target local states of the corresponding participant system and events triggering, and resulting from, the respective local state transition. The method also includes processing the information retrieved from the first storage location to generate, and store in a second storage location, information on collaboration states and collaboration state transitions of said process. The collaboration states are defined by a local state for each participant system and a communication status of each message exchangeable between said participant systems. The collaboration state transitions are determined by applying said local state transitions to the collaboration states. The method includes, upon generation and storage of said information on said collaboration states and collaboration state transitions, retrieving that information from said second storage location. The method includes processing said information retrieved from said second storage location to generate information on incompletely specified terminal collaboration states among said collaboration states. An incompletely specified terminal collaboration state is a terminal collaboration state in which at least one message is underway between said participant systems. The method includes generating a result data object containing information on every incompletely specified terminal collaboration state found.

Independent claims 8 and 9 are directed, respectively, to a computer system that carries out the steps of the method described in claim 1, and a computer program product that, when executed, carries out the steps of claim 1.

**Saito** is directed to a method for validating a protocol specification. As defined in the reference, a protocol specification describes behaviors to be taken by individual processes in a system. (Col. 1, lines 46-47.) Figures 2(a), 2(b), 3, 9(a) and 9(b), referenced by the Examiner, show an example of a protocol specification including two processes, process 1 shown in Figure 2(a) and process 2 shown in Figure 2(b). Figures 9(a) and 9(b) show state transition graphs for the processes 1 and 2, and more specifically, Figure 9(a) shows a state transition graph for the

process 1 shown in Figure 2(a), and Figure 9(b) shows a state transition graph for the process 2 shown in Figure 2(b).

**Bosik** relates to communication protocols to interconnect heterogeneous systems. In particular, **Bosik** shows, in Figure 1 referenced by the Examiner, a typical customer configuration of a multi-vendor system that imposes on the telecommunications industry the need to ensure interoperability among a wide variety of products. **Bosik** also shows, in Figure 19 referenced by the Examiner, an ISDN test-bed architecture that includes a database labeled "test scripts."

Applicant submits that independent claim 1 defines subject matter that is patentable over **Saito** and **Bosik**, even if combined as the Examiner has combined them. In particular, there is no disclosure in either reference of many limitations set forth in claim 1. For example, neither reference discloses, as required by claim 1, a method that includes the generation of collaboration states defined by a local state for each participant system and a communication status of each message exchangeable between said participant systems. In **Saito**, by contrast, there is no collaboration shown in the reference by the two processes 1 and 2 cited by the Examiner, and there is no disclosure of any collaboration states as that term is further defined in the claim. To illustrate this distinction between Applicant's claimed subject matter and the **Saito** reference, Applicant refers the Examiner to Applicant's specification, at the table provided on page 20. This table in Applicant's specification shows virtual global states (that is, the claimed collaboration states), and shows that each such virtual global state includes the state of a first system, the state of a second system, and indicators for each of the signals transmitted between the two systems as to whether those signals are underway or not. By contrast, Figures 2(a), 2(b) and 3 of **Saito**, which the Examiner references in connection with the "collaboration states" claim limitation, and in particular Figure 3 of **Saito**, shows no state that involves collaboration between **Saito's** process 1 and process 2 and state information for multiple participant systems.

In addition, neither cited reference discloses, as required by claim 1, a method that includes the generation of collaboration state transitions of the collaboration process, which collaboration state transitions are determined by applying the local state transitions to the

collaboration states. As discussed above, neither reference discloses collaboration states as that term is defined in the claim, and hence cannot show the application of the local state transitions to collaboration states which is necessary to generate the collaboration state transitions.

Further yet, neither cited reference discloses, as required by claim 1, a method that includes the processing the information on the collaboration states and collaboration state transitions of the collaboration process to generate information on incompletely specified terminal collaboration states among the collaboration states. Again, there is no disclosure of information on collaboration states and collaboration state transitions in the cited references, and hence there is no disclosure of processing of such information. Further, there can be no terminal collaboration states because there are no collaboration states, and further no incompletely defined terminal collaboration states.

The cited references also do not render the subject matter of claim 1 obvious. Indeed, neither reference relates to collaboration processes that involve distributed computer-based participant systems exchanging messages through an asynchronous messaging network, and hence neither reference relates to generating information on incompletely specified terminal collaboration states. The subject matter is advantageous in the development of collaborative processes that involve the exchange of messages between different computing systems as part of the process. In that the references are largely unrelated to the subject matter of the present invention, it cannot be said that the references, even if combined, render the claimed subject matter obvious.

With respect to independent claims 8 and 9, these claims are patentable over the cited references for at least the reasons discussed above in connection with claim 1.

Accordingly, Applicant submits that the independent claims 1, 8 and 9 each defines subject matter that is patentable in view of **Saito** and **Bosik**, as do the pending dependent claims 2-7. As such, Applicant respectfully requests that the Examiner remove the rejection of the claims based on **Saito** and **Bosik**.

### Conclusion

Applicant submits that the pending claims are patentable in view of the references of record, and request that the Examiner issue a notice of allowance.

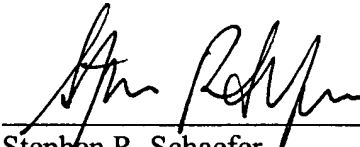
It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Enclosed is \$1,020.00 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date:

Aug 15, 2006



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